What is claimed is:

1. A recombinant adjustable threshold genetic switch comprising:

(a) a first nucleic acid construct comprising an inducible promoter operably associated with a first gene encoding a first repressor protein; and

(b) a second nucleic acid construct comprising a constitutive promoter operably associated with a second gene encoding a second repressor protein,

wherein the first repressor protein, when produced, is capable of repressing transcription from the constitutive promoter, and wherein transcription of the first gene encoding the first repressor protein is inducible by an activating agent, and

wherein the second repressor protein, when produced, is capable of repressing transcription from the inducible promoter.

2. The genetic switch of claim 1, wherein upon exposure to a threshold amount of the agent, the inducible promoter transcribes the first gene to produce the first repressor protein in an amount sufficient to repress transcription from the constitutive promoter.

3. The genetic switch of claim 2, whereby reduction in the amount of the activating agent results in decreased transcription of the first gene encoding the first repressor protein.

4. The genetic switch of claim 3, whereby reduction in the amount of the activating agent results in derepression of the constitutive promoter thereby increasing transcription of the second gene encoding the second repressor protein.

5. The genetic switch of claim 1, wherein the inducible promoter, the constitutive promoter, or both the inducible and constitutive promoters are in operable association with an operator.

6. The genetic switch of claim 1, wherein the first construct further comprises a third gene encoding a protein of interest, wherein the third gene is in operable association with the inducible promoter.

7. The genetic switch of claim 6, wherein transcription of the third gene is increased by the activating agent.

8. The genetic switch of claim 1 or 6, wherein the second construct further comprises a fourth gene encoding a protein of interest, wherein the fourth gene is in operable association with the constitutive promoter.

9. The genetic switch of claim 8, wherein transcription of the fourth gene is repressible by the activating agent.

10. The genetic switch of claim 1, wherein the first and second nucleic acid constructs are disposed within a single contiguous nucleic acid molecule.

11. A host cell harboring the genetic switch of claim 1.

12. The host cell of claim 11, wherein the host cell is a prokaryotic cell.

13. The host cell of claim 12, wherein the prokaryotic cell is *Escherichia coli*.

14. The host cell of claim 11, wherein the host cell is a eukaryotic cell.

15. The host cell of claim 14, wherein the eukaryotic cell is a mammalian cell or a yeast cell.

16. A method of alternating transcription from first and second promoters in a host cell, the method comprising the steps of:

(i) providing a host cell harboring a recombinant adjustable-threshold genetic switch comprising:

(a) a first nucleic acid construct comprising an inducible promoter operably associated with a first gene encoding a first repressor protein; and

(b) a second nucleic acid construct comprising a constitutive promoter operably associated with a second gene encoding a second repressor protein,

wherein the first repressor protein, when produced, is capable of repressing transcription from the constitutive promoter, and wherein transcription of the first gene encoding the first repressor protein is inducible by an activating agent, and

wherein the second repressor protein, when produced, is capable of repressing transcription from the inducible promoter; and

(ii) exposing the host cell to an activating agent in an amount sufficient to increase transcription of the first gene encoding the first repressor protein.

17. The method of claim 16, wherein in step (ii) the host cell is exposed to a threshold amount of activating agent which induces transcription of the first gene encoding the first repressor protein thereby to produce an amount of first repressor protein sufficient to repress transcription of the second gene by the constitutive promoter.

18. The method of claim 16 or 17, comprising the additional step of reducing the amount of the activating agent thereby to reduce transcription from the inducible promoter.

19. The method of claim 16, wherein the inducible promoter, the constitutive promoter, or both the inducible and constitutive promoters each are operably associated with an operator.

20. The method of claim 16, wherein in step (i), the first construct further comprises a third gene encoding a protein of interest, wherein the third gene is in operable association with the inducible promoter.

21. The method of claim 20, wherein in step (ii), exposing the host cell to the activating agent increases transcription of the third gene.

22. The method of claim 16, wherein in step (i), the second construct further comprises a fourth gene encoding a protein of interest, wherein the fourth gene is in operable association with the constitutive promoter.

23. The method of claim 22, wherein in step (ii), exposing the host cell to the agent represses transcription of the fourth gene.

24. The method of claim 16, wherein in step (i), the first and second nucleic acid constructs are disposed within a single contiguous nucleic acid molecule.

25. The method of claim 16, wherein the host cell of step (i) is a prokaryotic cell.

26. The method of claim 25, wherein the prokaryotic cell is *Escherichia coli.*

27. The method of claim 16, wherein the host cell of step (i) is a eukaryotic cell.

28. The method of claim 27, wherein the eukaryotic cell is a mammalian cell or a yeast cell.